AMSAT News Service Weekly Bulletins
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SB SAT @ AMSAT $ANS-359.01
PHASE-3D FREQUENCIES

HR AMSAT NEWS SERVICE BULLETIN 359.01 FROM AMSAT HQ
SILVER SPRING, MD DECEMBER 26, 1993
TO ALL RADIO AMATEURS BT
BID: $ANS-359.01

The Phase-3D Transponder Frequencies Are Solidified

During the 3rd Payload Engineering meeting in Garching (near Munchen) the following frequencies are determined for the P-3D International Satellite:

1. 21.210 MHz - 21.250 MHz uplink only (HF band)
   Mode K

2. 29.330 MHz CAM (Compatible Amplitude Modulation)
   Downlink only. (no transponder)
   Spare Frequencies: 29.310, 29.320, 29.340, and 29.350 MHz
   Mode A

3. 145.805 MHz - 145.995 MHz Uplink and Downlink: Mode V

4. 435.200 - 435.700 MHz Uplink 1
   436.000 - 436.500 MHz Uplink 2
   435.300 - 435.700 MHz Downlink
   Mode U

5. 1268.5 - 1269.0 MHz Uplink 1
   1269.0 - 1269.5 MHz Uplink 2
   Mode L

6. 2400.5 - 2400.9 MHz Downlink
   2400.1 - 2400.5 MHz Uplink
   Mode S

7. 5840 MHz center frequency channel 25 kHz wide
   Downlink only
   Mode C

8. 10451.0 - 10451.5 MHz Downlink
   Mode X

9. 24048 MHz downlink channel 25 kHz wide
   Mode Ka

Each frequency passband is 500 KHz wide on the uplink and 400 kHz wide on the downlink except the Mode V is divided in an analog segment and a digital segment. The digital segment is in the lower frequency part of the band, the analog segment is in the upper frequency part of the band. The uplink segments are of equal width for both analog and digital modes. The down-link segment for digital modes is 150 kHz wide analog modes downlink is 250 KHz wide. The exact position of the beacons will be determined as soon as all relevant information is available.

These frequencies are FINAL and can only be changed for VERY good reasons.

Note that with the P-3D, the mode designations are changed according to

Dick Janson WD4FAB designations:

Old Mode B = Mode UV
Old Mode J = Mode VU

To avoid confusion especially for newcomers, it is recommended that the new tranponder mode designations be used for all satellites.

[The AMSAT News Service (ANS) would like to thank Freddy de Guchteneire (ON6UG), IARU Satellite Coordinator, for this bulletin item.]

/EX
SB SAT @ AMSAT $ANS-359.02
AO-21 GOES MULTIMEDIA!

HR AMSAT NEWS SERVICE BULLETIN 359.02 FROM AMSAT HQ
SILVER SPRING, MD DECEMBER 26, 1993
TO ALL RADIO AMATEURS BT
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RUDAK/AO-21 Goes Multimedia!

The RUDAK group of AMSAT-DL achieved another milestone with the development of more sophisticated software for the OSCAR-21/RUDAK satellite.

Although some key members are already very busy with P-3D activities, much time has been invested to implement new and attractive modes on AO-21.

Beside the Voice Broadcast which was successfully used throughout the last year with several greeting messages in different languages, RUDAK is now capable to transmit picture files in WEFAX compatible format. Unfortunately there is no CCD camera onboard AO-21, so the pictures have to be uploaded first by the AO-21 command station. But not only is RUDAK now capable of transmiting FAX pictures, the pictures themselves are uploaded and stored in JPEG format! They are also converted online by the RTX-2000 RISC processor from JPEG into WEFAX during transmission, so not alot of memory is needed.

JPEG compression gives an enormous reduction in file size compared to GIF picture format, without to much quality losses. This saves a lot of space in the 1MB ramdisk and will also speed-up the upload time drastically.

RUDAK is also capable to hold several picture and voice broadcast files in the ramdisk at the same time. They can be transmitted on a schedule mixed with FM-Mode and 1200 baud AX.25 Telemetry.

The "Multimedia" satellite premiere will be activated for the first time on December 24 and some special season greeting in voice and picture will be transmitted.

Stay tuned to AMSAT OSCAR-21 for some more surprises!

The RUDAK downlink mid-frequency is 145.987 MHz, Uplink for FM-Mode is 435.014 MHz. The WEFAX format is like METEOSAT WEFAX Specification (MGCS): FM, 2400 Hz Subcarrier frequency with double sideband AM modulation, 300 Hz start signal for 3 seconds, 450 Hz stop signal for 5 seconds, 800 x 800 Pixel Image format with 256 grey levels, 4 Lines/sec.

MERRY CHRISTMAS and a HAPPY NEW YEAR
AMSAT-DL, Germany and AMSAT-U, Russia

/EX
SB SAT @ AMSAT $ANS-359.03
SKN IS COMING!

HR AMSAT NEWS SERVICE BULLETIN 359.02 FROM AMSAT HQ
SILVER SPRING, MD DECEMBER 26, 1993
TO ALL RADIO AMATEURS BT
BID: $ANS-359.03

YOU'RE INVITED TO THE 22ND ANNUAL "STRAIGHT KEY NIGHT ON OSCAR"

As you know, ARRL has for many years sponsored Straight Key Night (SKN) on New Year's Eve and New Year's Day; it is expected to do so again in 1994.

On New Year's Eve, 1972 (January 1, 1973 UTC), a few of us from the AMSAT 75-meter Net decided that we would try to combine the best of the old and the new in Amateur Radio by operating in Straight Key Night on what was then the brand-new communications satellite, AMSAT-OSCAR 6. Since then, proud "brasspounders" have kept the tradition going by operating CW on OSCAR using straight keys for at least a little while on every New Year's Day (UTC) when there's been an OSCAR to work.

You're most cordially invited to join in the 22nd annual celebration. It's entirely informal and unofficial; there are no rules, no scoring and no need to send in a log. Just call CQ SKN in the CW passband segment of any OSCAR satellite between 00:00 and 23:59 UTC on January 1, 1994, or answer a CQ SKN call from another station. This year, we're changing things a little: we'll also count QSOs made via the oldest, largest and most reliable communications satellite, OSCAR Zero, otherwise known as the moon. AMSAT didn't build it, but we can adopt it! Of course, all SKN operating must be done with a straight hand key.

Just as in the ARRL HF version of this event, we're conducting a search for the OSCAR SKN operator with the "best fist." Please send in a nomination of someone you worked; we'll announce the winner or winners via packet bulletin. Last year's winners were KB6A, W6HDO and W8JAQ. Nominations may be sent to Ray Soifer via packet to W2RS @ WA2SNA.NJ. USA. NA, from Europe to W2RS @ GB7HSN.#32.GBR.EU, via Internet to w2rs@amsat.org, or by mail via his Callbook address.

[The AMSAT News Service (ANS) wold like to thank Ray Soifer (W2RS) for this bulletin item.]

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SB SAT @ AMSAT $ANS-359.04
W3XO & AO-21 SEND XMAS GREETINGS

HR AMSAT NEWS SERVICE BULLETIN 359.04 FROM AMSAT HQ
SILVER SPRING, MD DECEMBER 26, 1993
TO ALL RADIO AMATEURS BT
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AO-21 Sends Chrismas Greetings To All Radio Amateurs!

"Surprise is hardly the word for it", says AMSAT-NA President Bill Tynan (W3XO). Bill caught an AO-21 pass Thursday evening immediately after reading DB2OS's message about the Holiday activity on this versatile satellite. He was pleased, of course, to hear the Christmas carol, "Silent Night", coming from his speaker while tuned to AO-21's 145.983 FM downlink.

His first thought, probably like that of many others, on hearing any form of music on amateur frequencies was; "They can't do that!" Upon further reflection, he realized that, the prohibition against the transmission of music on Amateur Radio is a U.S. rule, not necessarily reflected by every other country. Since AO-21 was licensed by the Soviet Union and now by Russia, sending this form of Holiday greeting is subject to their rules.

So, Bill advises, just listen and enjoy. Please do not complain, about music on the ham bands to the FCC, the ARRL or AMSAT. But also, just because you heard it on an amateur frequency, don't relay it to you your friends via Amateur Radio.

On behalf of the organization, AMSAT-NA President Bill Tynan (W3XO) wishes satellite enthusiasts and all hams everywhere, season's greetings and the best of DX and good fortune in 1994.

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SB SAT @ AMSAT $ANS-359.05
AMSAT OPS NET SCHEDULE

HR AMSAT NEWS SERVICE BULLETIN 359.05 FROM AMSAT HQ
SILVER SPRING, MD DECEMBER 26, 1993
TO ALL RADIO AMATEURS BT
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Current AMSAT Operations Net Schedule For AO-13

AMSAT Operations Nets are planned for the following times. Mode-B Nets are conducted on AO-13 on a downlink frequency of 145.950 MHz. If, at the start of the OPS Net, the frequency of 145.950 MHz is being used for a QSO, OPS Net enthusiasts are asked to move to the alternate frequency of 145.955 MHz.

Date	UTC	Mode	Phs	NCS	Alt NCS
3-Jan-94	0200	B	160	WA5ZIB	N7NQM

Any stations with information on current events would be most welcomed. Also, those interested in discussing technical issues or who have questions about any particular aspect of OSCAR statellite operations, are encouraged to join the OPS Nets. In the unlikely event that either the Net Control Station (NCS) or the alternate NCS do not call on frequency, any participant is invited to act as the NCS.

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Slow Scan Television on AO-13

SSTV sessions will be held on immediately after the OPS Nets a downlink on a Mode-B downlink frequency 145.960 MHz.

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SB SAT @ AMSAT $ANS-359.06
FO-21 GOES MULTIMEDIA!

HR AMSAT NEWS SERVICE BULLETIN 359.06 FROM AMSAT HQ
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First FO-20 Color Fax

With the Japanese FO-20 satellite placed into analog mode for the week 1st to 8th of December 1993, Ted G6HMS and Ian G0NKA employed daily 16:00-24:00 UTC passes experimenting at passing FAX pictures through the JA Mode transponder. Once the fine technique of holding the picture by following the Doppler movement on the downlink was overcome, the methodology worked well. Unlike voice transmissions where the ear can compensate for tonal frequency shift, computers decoding Fax signals are far more critical.

By Monday 6th December Ian and Ted had the best yet black and white picture throughput. They then followed this with a full color transmission that produced a 50% success rate. On Tuesday 7th December between 19:59 and 20:03 UTC, transmitting using JV-Fax 6.0 and receiving on the shareware version of Microfax, they succeeded in producing full colour throughput with better than 90% resolution.

On all experiments the LSB uplink used is 145.980 MHz. The downlink USB frequency produced is 435.820 MHz +/- Doppler. The uplink frequency is maintained throughout the pass and the downlink is tuned to compensate for the change of doppler shift.

Ian and Ted will be trying again between December 15th to Feb '94 whenever FO-20 is scheduled to be in analog mode. Please join them if you can. They look forward to seeing your pictures. Reports would be very welcome. For schedules, Ian may be contacted via PACKET as G0NKA @ GB7DTX.GBR.EU.

[The AMSAT News Service (ANS) would like to thank G3IOR for this bulletin item. G3IOR can be reached at G3IOR @GB7VLS]

/EX
SB SAT @ AMSAT $ANS-359.07
WEEKLY OSCAR STATUS REPORTS

HR AMSAT NEWS SERVICE BULLETIN 359.07 FROM AMSAT HQ
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Weekly OSCAR Status Reports: 26-DEC-93

AO-13: Current Transponder Operating Schedule:
L QST *** AO-13 TRANSPONDER SCHEDULE *** 1993 Nov 15-Jan 31
Mode-B : MA 0 to MA 95 !
Mode-B : MA 95 to MA 180 !
Mode-B : MA 180 to MA 218 !
Mode-S : MA 218 to MA 220 !<- S Beacon only
Mode-S : MA 220 to MA 230 !<- S Transponder; B trsp. is OFF
Mode-BS : MA 230 to MA 256 ! Blon/Blat 240/-5
Omnis : MA 250 to MA 150 ! Move to attitude 180/0, Jan 31
[G3RUH/DB2OS/VK5AGR]

FO-20: The following is the current FO-20 operating schedule:
From December '93 thru February '94, the analog mode and the digital mode will be on alternately for a week at a time.
ANALOG MODE:
29-DEC-93 8:30 -TO- 05-JAN-94 8:50 UTC
12-JAN-94 7:30 -TO- 19-JAN-94 7:50 UTC
26-JAN-94 8:20 -TO- 02-FEB-94 6:50 UTC
09-FEB-94 7:15 -TO- 16-FEB-94 7:40 UTC
DIGITAL MODE: Unless otherwise noted above. [JJ1WTK]

DOVE: At 05:30 UTC, 24-DEC-93, WD0E put DOVE back into the state where it is sending telemetry every 20 seconds. The RF output transmitter power is back up to about 3 watts. Also, in response to several inquries, the S-band transmitter is back on. There is also a season's greetings message in the text broadcast. [WD0E]

MIR: MIR has indeed been on voice recently! KB9BNR read that MIR has been QRT on voice for a long time. KB9BNR states it this has not been case. N9OUU worked Alexander Serebrov (R0MIR) two weeks ago as it passed over Davenport, IA. KB9BNR know this because everytime N9OUU works MIR, N9OUU calls him! Checkout KB9BNR's new landline BBS at

(309) 797-3827. He has lots of AMSAT information.
[KB9BNR AMSAT Area Coordinator]

RS-12: The major solar event and Kp7 prediction produced some remarkable long distance sub-horizon paths for the RS-12 Mode 'K' satellite on December 1st. GM4IHJ alerted G3IOR that he had been copying the 29.407 MHz beacon long before his calculated horizon AOS. G3IOR took the pass that showed a AOS of 13:15 UTC, but had excellent copy of the downlink and beacon from 1300 when the satellite was passing over Mexico right up the central United States, in line of sight range of all US and VE call areas. The extension continued until the satellite was over UA9, within range of UA0 and JA. Sadly (apart from G3IOR) there were no stations active on RS-12 over the period of study. It would appear that such conditions are produced just before solar storms, and as GM4IHJ and NM7M forecast, when the interplanetary field is reversed. In a follow-up status report on this event, G3IOR says the extended northerly polar subhorizon paths for RS-12 seem to have disappeared this past week, to be replaced by extensions to the normal LOS by up to eight minutes on passes going out between 180 and 240 degrees azimuth. G3IOR worked K1FX (SSB) and N4ZC (CW) plus several Europeans mutual sub-horizon. Heard but got away included KN4UI and VE3CRG. Within mutual horizon QSO's inluded GW3NXR, EI7AF, UA9WE, UA1AP, UB5OA, EA7CEZ, LA1IC, UA1ADY, DJ6EA, G3FBN, SP4DCA, ER1RR and OZ4ZO. [G3IOR]

PoSAT: G3AAJ reports that PoSAT will place it's amateur radio section on (38.4 KBauds?) on January 6, 1994. No OSCAR enumeration has yet been given (or sought?) for PoSAT. [G3IOR]

The AMSAT NEWS Service (ANS) is looking for volunteers to contribute weekly OSCAR status reports. If you have a favorite OSCAR which you work on a regular basis and would like to contribute to this bulletin, please send your observations to WD0HHU at his CompuServe address of 70524,2272, on INTERNET at wd0hhu@amsat.org, or to his local packet BBS in the Denver, CO area, WD0HHU @ W0LJF.#NECO.CO.USA.NOAM. Also, if you find that the current set of orbital elements are not generating the correct AOS/LOS times at your QTH, PLEASE INCLUDE THAT INFORMATION AS WELL. The information you provide will be of value to all OSCAR enthusiasts.

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